Remarks

Applicant appreciates the Examiner's advice provided in the phone conversation on November 16, 2005. Favorable entry of this Amendment with RCE and reconsideration of this application is requested.

The final Office Action dated September 19, 2005, indicated that claims 13-20, 33-40, 53-60 and 62 are withdrawn; claims 1-2, 6, 21-22, 26, 41-42, 46 and 61 are rejected under 35 U.S.C. § 102(b) over Applicant's Fig. 3; claims 3-4, 8-9, 23-24, 28-29, 43-44 and 48-49 are rejected under 35 U.S.C. § 103(a) over Applicant's Fig. 3; claims 5, 25 and 45 are rejected under 35 U.S.C. § 103(a) over Applicant's Fig. 3 in view of Koehn *et al.* (U.S. Patent Publ. No. US2003/0117995); claims 7, 27 and 47 are rejected under 35 U.S.C. § 103(a) over Applicant's Fig. 3 in view of Wiese *et al.* (U.S. Patent Publ. No. US2001/0028692); claims 10, 11, 30, 31, 50 and 51 are rejected under 35 U.S.C. § 103(a) over Applicant's Fig. 3 in view of Reusens *et al.* (U.S. Patent Publ. No. US2002/0054610); claims 12, 32 and 52 are rejected under 35 U.S.C. § 103(a) over Applicant's Fig. 3 in view of Carrender (U.S. Patent Publ. No. US2002/0149484).

The Claim Amendments

Applicant has amended the claims to further emphasize that the collection of information and creation of models are based upon the actual signal interference as carried by the lines. The above amendment is presented to emphasize that which should be implicitly understood as distinguishing the claimed invention from the asserted prior art. As discussed in connection with the claim amendments presented in the immediately-preceding Office Action Response and Amendment After Final (which claim amendments were not entered), the claimed invention had set forth that the interference for consideration in the modeling was the actual interference collected from the lines, and as more expressly set forth in other claims, this interference for consideration in the modeling is based on signals "carried by" the transmission lines. The claimed invention has also been directed to performing such operations on, and with reference to, multiple lines and to including a common processing node for the multiple lines. As the scope of the claimed invention has not changed in this regard, such changes should not be construed as an effort to narrow the invention. Moreover, one of the changes to claim 1 broadens the invention in that the step of "synchronizing transmissions ..." is no longer

a clause of claim 1.

Withdrawn claims 13-20, 33-40, and 53-60 have been canceled and are presented as new claims 63-87 with amendments consistent with the previously pending claims such that these new claims now include limitations of claim 1. More specifically, independent claims 63, 72, and 80 include limitations found in claim 1, *e.g.*, limitations directed to creating a model of the line, signal and the actual interference characteristics of the communication lines and processing signals using the model to remove interference. Therefore, in the context of the restriction procedure, these claims are believed to be directed to the same invention and the basis for the previous restriction of such claims should now be overcome.

Claim 62 has also been canceled.

The Advisory Action

Applicant respectfully submits that the Advisory Action misinterprets a few items raised in Applicant's previous Office Action Response and Amendment After Final. Applicant did not intend to argue that the system of Fig. 3 is not prior art under Section 102. On the contrary, Applicant previously identified Fig. 3 as being prior art which, implicitly would be prior art under Section 102. In the previous Office Action Response and Amendment After Final, Applicant explained that there is no evidence in the record that would support the assertion that the system of Fig. 3 is anticipating art under Section 102(b) because there is no evidence that the system of Fig. 3 corresponds to the claimed invention.

With respect to the Advisory Action's alleged issue of new matter, Applicant respectfully submits that there is no such issue. A brief review of Applicant's originally-filed claims (especially the "carried by" limitations of claims 21, 41 and 61) and technical disclosure (*e.g.*, the modeling depicted by Fig. 8) should clearly dispose of any question in this regard.

The Advisory Action also refers to module 714 of Fig. 7 as though this module stands alone and does not account for actual interference of signals carried by the lines. As explained at page 17, lines 11-22, and in connection with Fig. 8, module 714 of Fig. 7 provides "universal requirements and constraints" that apply to all lines of the system. This module is not intended for modeling /characterization/measurement of the actual channel/loop/noise/interference (as illustrated in Figure 8). Module 715 performs such

functions: "Again, line and signal characteristics for each line 712 can be acquired and provided to the communication adaptation module 715" (page 17, lines 15-17).[1] This actual interference is shown being collected in the cross-coupling lines of Fig. 8, which is a model for the interference channel and shows the previously mentioned "line characteristics." Accordingly, the Advisory Action misconstrues Fig. 7 which teaches collecting information and creating models based upon the actual signal interference carried by the lines.

The Pending Rejections

Applicant respectfully traverses each of the prior art rejections (Section 102(b) and Section 103(a)). There is no evidence of record that the system described as Applicant's Fig. 3 qualifies as prior art under Section 102(b) in a manner corresponding to the claimed invention. Applicant submits that without a presentation of support for the basis of the rejection, the Section 102(b) (and Section 103(a)) rejections are improper and accordingly requests that the rejections be withdrawn.

Each of the independent claims 1, 21, 41, and 61 are clearly distinguishable over the prior art system of Fig. 3. The system of Fig. 3 uses a worst case analysis that is not based on any actual interference (*e.g.*, as in claim 1) or on any interference carried by the lines (*e.g.*, as in claim 21). Moreover, each of claims 21, 41 and 61 indicate that the model of characteristics (including interference) is based on signals carried by the communication lines, and all of the claims refer to modeling information based on actual interference.

In contrast to the claimed invention, the prior art system of Fig. 3 does not create or use any model that includes interference in the signal lines. As in the Office Action Response and Amendment filed on July 28, 2005, Applicant's discussion of Fig. 3 at page 4, lines 7-8, of the Specification, teaches that the asserted prior art is designed to accommodate the worst cases of crosstalk or other interference, irrespective of the actual conditions present in the system during operation. An estimate of expected worst case

[1] For further support, see page 11, lines 5-7 including a discussion of "collecting information about digital communication lines in the system and adaptively and/or dynamically determining line and signal characteristics of the digital communication lines"; page 15, line 26 – page 16, line 3, which discusses differences between "static" and "dynamic" spectrum management, and indicates that the present invention is directed to the latter; and page 17, lines 23-31, which refers to a U.S. patent application as one example of how interference estimation (as in module 715) can be performed by collecting data from multiple lines. This U.S. patent application is published as number 2002/0136397.

interference is merely an estimate and is not line interference that is actual or based on signals carried by the lines.

In view of the above discussion, Applicant believes that the rejection has been overcome and the application is in condition for allowance. A favorable response is requested. Should there be any remaining issues that could be readily addressed over the telephone, the Examiner is encouraged to contact the undersigned at (651) 686-6633.

Respectfully submitted,

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Dated: November 16, 2005

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